



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/511,231 10/12/2004 Andreas Schuppert 100717-574 9226

27386 7590 06/05/2007
NORRIS, MCLAUGHLIN & MARCUS, P.A.
875 THIRD AVE
18TH FLOOR
NEW YORK, NY 10022

EXAMINER

KENNEDY, ADRIAN L

ART UNIT PAPER NUMBER

2121

MAIL DATE DELIVERY MODE

06/05/2007 PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,231	Applicant(s) SCHUPPERT ET AL.	
	Examiner Adrian L. Kennedy	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 March 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 22-44 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 22-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

Examiner's Detailed Office Action

1. This Office Action is responsive to **Amendment After Non-Final Rejection**, filed **March 26, 2007**.
2. **Claims 22-43** were originally presented.
3. **Claims 22-24, 26, 32-33, 36, 42 and 43** were amended.
4. **Claims 25, 27-31, 34-35 and 37-41** were amended.
5. **Claims 44** is new.
6. **Claims 22-44** will be examined.

Specification

7. The amendment filed March 26, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The examiner takes the position that the proposed amendments to the applicant's specification to be made between paragraphs [0017] and [0018] starting with "In a preferred embodiment, the inventive method..." and ending in the next paragraph with "It is also possible to evaluate the experiments using a plurality of characteristics of number." add new matter to the applicant's disclosure. This position is supported by the fact that after thoroughly reviewing the applicant's disclosure, the examiner found no teaching of an "optimization goal".

Applicant is required to cancel the new matter in the reply to this Office Action.

Art Unit: 2121

Claim Rejections - 35 USC § 112

8. Claims 23-24, 44 are rejected under 35 U.S.C. 112, first paragraph; as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 23 and 44 are introduces new matter in claiming the inputting of an “optimization goal” which is not supported by the applicant’s disclosure. Furthermore, claim 24 is rejected as being dependent on claim 23 and as a result including the new matter found in claim 23.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 22-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al. (USPN 6,996,550).

Regarding claim 22:

Wang et al. teaches

Art Unit: 2121

(currently amended) A method for designing experiments (C 1, L 21-22; “*methods and apparatus for designing and preparing experiments*”) comprising the steps of:

- a) selecting (C 4, L 46-54; “*providing*”) at least a first experiment (C 4, L 54-56; “*set of experiments*”) from an experimental space (C 4, L 54-56; “*a parameter space*”) including a plurality of experiments using a data-driven optimizer;
- b) inputting experimentally determined experiment data of the first experiment to at least one meta layer module (The examiner takes the position that the receiving experiment data at a “met layer” is anticipated by Wang et al. teaching the process of “providing” in Column 4, Lines 46-54, and teaching the use of an optimization processing in selecting a generating configuration in Column 6, Lines 15-17.);
- c) evaluating the experimentally determined experiment data of the first experiment at the meta layer module (C 6, L 16-18; “*optimization process*”), wherein the meta layer module generates evaluation data (C 6, L 14-16; “*generating a plurality of configurations*”) based on the evaluating of the experimentally determined experiment data (The examiner takes the position that in teaching that the optimization process determines the optimal sequence of events for the experiments in Column 6, Lines 35-37, Wang et al. anticipates the applicant’s claimed evaluating being based on experimentally determined data. This position is supported by the fact that in order for the optimization to determine the optimal sequence of events, the process has to evaluate the configurations.); and

Art Unit: 2121

- d) processing the experimentally determined experiment data of the first experiment at the optimizer, wherein the processing at the optimizer is influenced by the evaluation data and wherein the optimizer generates experiment design data based on the processing of the experimentally determined experiment data (C 6, L 25-34; “*generating a plurality of configurations can include generating a first configuration and subsequently generating a sequence of second configurations, with each second configuration being generated by adding a pattern instance to a preceding configuration in the sequence*”);
- e) outputting an experiment design based on the experiment design data (The examiner takes the position that Wang et al. anticipates the applicant’s claimed outputting of an experiment design in teaching the outputting of a data representing an experiment in Column 7, Lines 19-21.).

The examiner takes the position that the experiment parameter space, as taught by Wang et al., is equivalent to the experimental space claimed by applicant.

Regarding claim 23:

Wang et al. teaches

(currently amended) The method further comprising the steps of:

- f) inputting an optimization goal (The examiner take the position that the inputting of an optimization goal is inherent in optimization process in the invention of Wang et al.);

Art Unit: 2121

g) selecting at least a second experiment (C 4, L 54-56; “*set of experiments*”) from the experimental space (C 4, L 54-56; “*a parameter space*”) using the optimizer;

h) performing step b) to step d) for experimentally determined experiment data of the second experiment (The examiner takes the position that in teaching the generation and selection of several configurations, and the optimizing of this process, Wang et al. anticipates the performing of the applicant’s claimed steps.); and

i) continuing to perform steps g) and h) until the optimization goal is reached (The examiner takes the position that the reaching of an optimization goal during the process of generating and selecting configurations is anticipated in Wang et al. teaching the identifying of an optimal sequence of events in a experiments in Column 6, Lines 35-37).

Regarding claim 24:

Wang et al. teaches

(currently amended) The method wherein at least one of the optimizer and the meta layer module changes the experimental space before the selecting the at least one second experiment step (C 6, L 25-34; “*generating a plurality of configurations can include generating a first configuration and subsequently generating a sequence of second configurations, with each second configuration being generated by adding a pattern instance to a preceding configuration in the sequence*”).

Art Unit: 2121

The examiner takes the position that the “configurations” serves as both an experimental spaces and the result of evaluations. The optimization process (C 6, L 16-18; “*optimization process*”) generates a new experimental space (C 6, L 25-34; “*second configurations*”) after processing (C 6, L 14-16; “*performing an optimization process*”) previous experimental spaces (C 6, L 25-34; “*preceding configuration*”).

Additionally, the examiner takes the position that the operations performed by the optimizer and the meta layer module, of applicants’ claimed invention are facilitated the optimization process (C 6, L 16-18; “*optimization process*”) of the invention of Wang et al.

The applicants’ specification discloses that the meta layer module is a method of tuning the optimizer in Paragraph 0017, whereas the invention of Wang et al. teaches the optimization process (C 6, L 16-18; “*optimization process*”) making use of target points (C 6, L 1-3; “*target points*”) and figures of merit (C 5, L 62-65; “*figure of merit*”). The examiner asserts that by making use of targets points and figures of merit, the optimization process taught by Wang et al. is self tuning, and therefore anticipates the meta layer module and the optimizer of applicants’ claimed invention.

Regarding claim 25:

Wang et al. teaches

(previously presented) The method wherein the meta layer module (C 6, L 16-18; “*optimization process*”) contains at least one of a neural network module, a hybrid model module, a rigorous model module and a data mining module(C 6, L 25-34).

Art Unit: 2121

The examiner takes the position that data mining is inherent in the process of optimization (C 6, L 25-34).

Regarding claim 26:

Wang et al. teaches

(currently amended) The method wherein the experiment data is based on experiments from at least one of active ingredient research, materials research, catalysis research, biotechnology and optimization of reaction conditions (C 9, L 13-20; "*reaction conditions*").

Regarding claim 27:

Wang et al. teaches

(previously presented) The method wherein the evaluating at the meta layer module to generate the evaluation data includes the step of filtering the experiment data (C 10, L 53-61; "*properties the can be screened*").

Regarding claim 28:

Wang et al. teaches

(previously presented) The method wherein the filtering includes re-evaluating the experiment data (C 32, L "*repeat steps 930 to 955*").

Regarding claim 29:

Art Unit: 2121

Wang et al. teaches

(previously presented) The method wherein the filtering includes at least one of weighting (C 19, L 13-15; “*weighting*”) and pre-selecting the experiment data.

Regarding claim 30:

Wang et al. teaches

(previously presented) The method wherein the weighting includes at least one of using a weighting parameter (C 19, L 13-15; “*weighting factors*”) and performing at least one duplication of the experiment data.

Regarding claim 31:

Wang et al. teaches

(previously presented) The method wherein the optimizer includes at least one core module and one module for selecting new test points (C 32, L 25-29, “*new experimental basket*”).

Regarding claim 32:

Wang et al. teaches

(currently amended) The method wherein the processing at the optimizer is influenced based on processing at the module for selecting the new test points (C 32, L 25-29, “*new experimental basket*”).

Art Unit: 2121

Regarding claim 33:

Wang et al. teaches

(currently amended) The method wherein the processing at the module for selecting the new test points is influenced by at least one of a value exceeding a threshold (C 32, L 51-53; “*pass the acceptance threshold*”) and a predefined user value.

Regarding claim 34:

Wang et al. teaches

(previously presented) The method wherein the processing at the optimizer is influenced based on processing at the core module.

The examiner takes the position that although Wang et al. does not explicitly recite the use of a “core module”, the operations performed by this module as disclosed in the applicants’ specification in Paragraph 0048 are inherent in the optimization process (C 32, L 5-42).

Regarding claim 35:

Wang et al. teaches

(previously presented) The method wherein processing at the core module is influenced by at least one of a value exceeding a threshold (C 32, L 51-53; “*pass the acceptance threshold*”) and a predefined user value.

Regarding claim 36:

Art Unit: 2121

Wang et al. teaches

(currently amended) A system for designing experiments (C 1, L 21-22; “*methods and apparatus for designing and preparing experiments*”) comprising:

an experimental space (C 4, L 54-56; “*a parameter space*”) module including a plurality of experiments (The examiner takes the position that in teaching the use of several configurations in Column 5, Lines 46-47, Wang et al. anticipates the use of several experiments.):

an experiment data module including experimentally determined experiment data for at least one of the experiments in the experimental space module (The examiner takes the position that Wang et al. anticipates the applicant’s claimed experimental data module containing experimentally determined experiment data, in teaching his configurations containing patterns from other configuration that were generated in Column 5, Lines 52-60.);

a optimizer for selecting (C 4, L 46-54; “*providing*”) at least one first experiment (C 4, L 54-56; “*set of experiments*”) from the experimental space module (C 4, L 54-56; “*a parameter space*”);

a meta layer module coupled to the optimizer (C 6, L 16-18; “*optimization process*”) for receiving experimentally determined experiment data of the first experiment from the experiment data module;

wherein the meta layer module evaluates the experimentally determined experiment data and generates evaluation data based on the evaluation of the experimentally determined experiment data (The examiner takes position that

Art Unit: 2121

Wang et al. anticipates the applicant's claimed meta layer evaluating data and generating evaluation data, in teaching the inclusion of an optimization process in the generation and selection of configurations in Column 6, Lines 14-16.); wherein the optimizer processes the experimentally determined experiment data of the first experiment and generates experiment design data based on the processing of the experimentally determined experiment data of the first experiment, wherein the processing by the optimizer is influenced by the evaluation data (The examiner takes the position that Wang et al. anticipates the applicant's claimed optimizer processing experimentally determined data, in teaching that his optimizer determining the optimal sequence of event in experiments in Column 6, Lines 35-37. The examiner takes the position that it inherent for the optimization process's processing to be influence by its evaluation of the process being optimized.); and wherein the optimizer outputs to the experimental space module an experiment design based on the experiment design data (The examiner takes the position that Wang et al. anticipates the outputting of the optimal experiment design in teaching the selecting of the configuration including the identifying of the optimal configuration in Column 6, Lines 35-37 and teaching the outputting of the experiment design in Column 7, Lines 19-21.).

The examiner takes the position that the "configurations" serves as both an experimental spaces and the result of evaluations. The optimization process (C 6, L 16-18; "*optimization process*") generates a new experimental space (C 6, L 25-34; "*second*

Art Unit: 2121

configurations") after processing (C 6, L 14-16; "*performing an optimization process*") previous experimental spaces (C 6, L 25-34; "*preceding configuration*").

Additionally, the examiner takes the position that the operations performed by the optimizer and the meta layer module, of applicants' claimed invention are facilitated the optimization process (C 6, L 16-18; "*optimization process*") of the invention of Wang et al.

The applicants' specification discloses that the meta layer module is a method of tuning the optimizer in Paragraph 0017, whereas the invention of Wang et al. teaches the optimization process (C 6, L 16-18; "*optimization process*") making use of target points (C 6, L 1-3; "*target points*") and figures of merit (C 5, L 62-65; "*figure of merit*"). The examiner asserts that by making use of targets points and figures of merit, the optimization process taught by Wang et al. is self tuning, and therefore anticipates the meta layer module and the optimizer of applicants' claimed invention.

Regarding claim 37:

Wang et al. teaches

(previously presented) The system wherein the meta layer module (C 6, L 16-18; "*optimization process*") includes at least one of a neural network module, a hybrid model module, a rigorous model module and a data mining module (C 6, L 25-34).

The examiner takes the position that data mining is inherent in the process of optimization (C 6, L 25-34).

Art Unit: 2121

Regarding claim 38:

Wang et al. teaches

(previously presented) The system where the meta layer module includes a filtering module for filtering the experiment data (C 10, L 53-61; “*properties the can be screened*”).

Regarding claim 39:

Wang et al. teaches

(previously presented) The system wherein the filtering module is operable to re-evaluate the experiment data (C 32, L “*repeat steps 930 to 955*”).

Regarding claim 40:

Wang et al. teaches

(previously presented) The system wherein the filtering module is operable to perform at least one of weighting (C 19, L 13-15; “*weighting*”) and pre-selecting the experiment data.

Regarding claim 41:

Wang et al. teaches

(previously presented) The system wherein the optimizer includes at least one core module and a module for selecting new test points (C 32, L 25-29, “*new experimental basket*”).

Art Unit: 2121

Regarding claim 42:

Wang et al. teaches

(currently amended) The system wherein the meta layer module is operable to influence the module for selecting the new test points (C 32, L 25-29, "*new experimental basket*").

Regarding claim 43:

Wang et al. teaches

(currently amended) The system wherein the meta layer module is operable to influence the core module.

The examiner takes the position that the operations of the applicant's claimed "core module", as disclosed in the applicants' specification in Paragraph 0048 are anticipated Wang et al. in the optimization process in Column 32, Lines 5-42.

Regarding claim 44:

Wang et al. teaches

(new) The system wherein the system is for achieving an optimization goal, and wherein, until the optimization goal is reached as determined by the optimizer or the meta layer (The examiner takes position that the optimization goal as claimed by the applicant, is inherent in the optimization process taught in the invention of Wang et al.) module,

(a) the optimizer selects at least one second experiment from the experimental space module (The examiner takes the position that selection of at least one

Art Unit: 2121

second experiment by the optimizer is anticipated by Wang et al. teaching the configuration generation and selection process including an optimization process in Column 6, Lines 14-16);

(b) the meta layer module receives experimentally determined experiment data of the second experiment from the experiment data module, evaluates the experimentally determined experiment data of the second experiment and generates evaluation data based on the evaluation of the experimentally determined experiment data of the second experiment (The examiner takes the position that it is inherent in the invention of Wang et al., that the optimization process receives the experimentally determined data. This inherency is found in the fact that in order for the optimization process to select the best sequence of events in an experiment, it must receive the sequence of events, which are experimentally determined using the optimization process.); and

(c) the optimizer processes the experimentally determined experiment data of the second experiment and generates experiment design data based on the processing of the experimentally determined experiment data of the second experiment, wherein the processing by the optimizer is influenced by the evaluation data generated from the experimentally determined experiment data of the first and second experiments (The examiner takes the position that Wang et al. anticipates the applicant's claimed optimizer processing experimentally determined data, in teaching that his optimizer determining the optimal sequence of event in experiments in Column 6, Lines 35-37. The examiner takes the position that it

Art Unit: 2121

inherent for the optimization process's processing to be influence by its evaluation of the process being optimized.).

Response to Arguments

Applicant's arguments filed on March 26, 2007 have been fully considered but are found to be non-persuasive. The unpersuasive arguments made by the Applicant are stated below:

In reference to Applicant's argument:

...the Wang et al. optimization does not account knowledge acquired from prior experimentation. Nowhere does Wang et al. teach or suggest generating evaluation data at a meta layer module, based on the meta layer module's evaluation of experimentally determined experiment data, in other words, prior experimentation knowledge, and then using the evaluation data to influence (tune) optimization processing of the experimentally determined experiment data at the optimizer as required by claim 22.

Examiner's response:

The examiner has respectfully considered the applicant's arguments, and takes the position that Wang et al. does anticipate the applicant's teaching of generating evaluation data at a meta layer module based on the meta layer module's evaluation of experimentally determined experiment data. This anticipation is found in Wang et al. teaching in the generation of configurations based on previously generated configurations in Column 5, Lines 52-61, teaching that configuration represent experiments in Column 5, Lines 46-47, and teaching the configuration generation and configuration selection steps including the performing of an optimization process in Column 6, Lines 14-15. The examiner asserts that Wang et al.'s optimization process anticipates the applicant's claimed meta layer. This position is supported by Wang et al. teaching in Column 6, Lines 14-16 that the optimization process is included in the

Art Unit: 2121

selection and generation of experiment configurations, and teaching in Column 6, Lines 35-37 that the optimization process can select the optimal sequence of events in the experiments.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

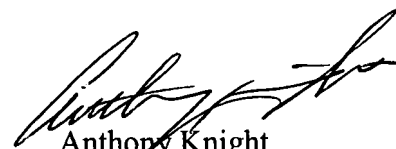
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2121

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK



Anthony Knight
Supervisory Patent Examiner
Technology Center 2100